

Illumination of Spectroscope Micrometers. By Dr. N. de Konkoly.

I take the liberty of calling the attention of the Society to the employment of small Swan incandescent lamps for illuminating the micrometers of spectrosopes.

I have lamps not larger than a hazel-nut, from Messrs. Greiner and Friedrich's, at Stützerbach, Thüringen, and also the size of a very small pea, just enough for illuminating the micrometer of a spectroscope. I have mounted them in a small tube attached in front of the micrometer, so that on the bottom of the tube is a small commutator. As I turn the commutator button 45° I receive light; as I turn it back all is dark. The lamp illuminates also the division of the micrometer-screw.

I have now arranged all my spectrosopes with electric illumination; three of them have a micrometer-screw, and two a scale, except the large Browning, on which both kinds of micrometer are attached. On this latter are two lamps, the one for the scale, the other for illuminating the wires (bright wires on dark ground) and the division of the micrometer-screw.

I send a photograph for the R.A.S., and am sure that Mr. Browning will not know this instrument in its altered form. There is also attached a second telescope parallel to the observing telescope (not attached in the photograph) for reading from the eye-piece the index of the micrometer division.

I have also arranged my large 10-inch refractor for the electric light. I have a large commutator on the eye-end of the telescope, and this communicates with both verniers of the declination circle, reading from the eye-end, with the illumination apparatus of the micrometer wires and the spectrosopes, and also with the R.A. circle.

The electricity is received through the perforated declination axis by an insulated wire from two or four accumulators, made by myself. They are sufficient for one evening's observation, and can be charged during the day by thirty Meidinger elements, the battery of the Observatory telegraph.

Spectroscopic Observation of the Red-coloured Sky at Sunset, 1884,
January 9, 5^h 20^m. By Dr. N. de Konkoly.

I used for this observation a Browning pocket-spectroscope, provided with a micrometer, and looked with it at the sky in an altitude between 5° and 10° . I observed in the less refrangible portion of the spectrum (yellow to red) five well-defined bands. The broadest was that towards violet from D, but it was not the darkest. There was a second less refrangible than D, but this was a very indefinite band. At the boundary of the red and orange was a very deep black band, very well defined on both

sides; less refrangible than that in the red was a very broad but pale band; less refrangible than this, nearly at the limit of the spectrum, was visible a very dark band, the blackest of all.

The positions of the bands were as follows:—

1. from 584.6 to 567.5 *
2. „ 603.1 „ 589.2
3. „ 639.5 „ 627.9 *
4. „ 711.0 „ 661.7
5. „ 739.0 „ 711.9

The correction of the zero point of the micrometer was deduced by observation of the bright sodium line in an alcohol flame.

The bands marked * clearly correspond to the lines of atmospheric vapour.

Spectroscopic Observations of Comet Pons-Brooks made at the Observatory O-Gyalla, Hungary. By Dr. N. de Konkoly.

The comet was observed in different phases of its brightness. I made the first observation on September 27 of the past year, using a spectroscope of little dispersion; I found three very ill-defined bright lines in its spectrum.

The second observation was on November 22 in tolerably steady air, at 5^h 50^m O-Gyalla M.T. The spectrum of the comet was pretty bright, and also the three bands, which were not at all difficult to measure. The position of the bands from the mean of three measures were—

I.	II.	III.
561.0	516.5	471.6 mmm.

I estimated the brightness of the bands respectively as 0.3, 1.0, and 0.5, beginning at the red end of the spectrum, the brightness of band II. being taken as unity.

A faint continuous spectrum was visible between wavelengths 608.0 to 447.4.

I next observed the spectrum of the comet on November 29, 6^h 50^m to 7^h 30^m. Band II. in the spectrum was very bright and remarkable. All three bands were pointed at their ends, and badly defined on both sides, a little swollen in the middle and overflowing in the faint continuous spectrum. This was very defined on band II.

The positions of the three bands from the mean of four observations was—

I.	II.	III.
560.9	516.5	471.4 mmm.

The brightness of the bands was estimated as 0.3, 1.0, and